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The Importance of Friendship for Youth with Attention-Deficit/Hyperactivity Disorder

Amori Yee Mikami

Department of Psychology, University of Virginia, 102 Gilmer Hall, P.O. Box 400400, Charlottesville, VA 22904-4400, USA

Abstract

It is well-established that youth with attention-deficit/hyperactivity disorder (ADHD) are often peer-rejected and rated by parents, teachers, and observers to have poor social skills, when compared to typically developing peers. Significantly less research, however, has been devoted to the experiences youth with ADHD have in their close friendships. The aim of this article is to draw attention to friendship as a distinct construct from peer rejection and social skills and to summarize what is known about youth with ADHD in their friendships. The potential for stable, high-quality friendships to buffer the negative outcomes typically conferred by peer rejection in this population is discussed. This article concludes with recommendations for interventions that specifically target improving the close friendships of youth with ADHD as a treatment strategy.

Keywords

Attention-deficit/hyperactivity disorder; Friendship; Peer relationships

Attention-deficit/hyperactivity disorder (ADHD) is a common disorder of childhood, affecting up to 8% of youth, and characterized by impairing symptoms of inattention and/or hyperactivity/impulsivity (American Psychiatric Association 2000). Although social problems are not part of the diagnostic criteria for ADHD, the peer relationship difficulties faced by youth with this disorder are profound (Hoza 2007; Whalen and Henker 1992).

It is estimated that half or more of elementary school-aged youth with ADHD can be considered peer-rejected, when compared to 10–15% of comparison youth (Hoza et al. 2005b; Pelham and Bender 1982). Rejection of children with ADHD occurs within hours of meeting unfamiliar peers (Erhardt and Hinshaw 1994; Hodgins et al. 2000). Another consistent finding is that youth with ADHD are rated by parents, teachers, and observers to display social skills about one standard deviation below those of comparison children (Bagwell et al. 2001; Greene et al. 2001). Although less is known about the functioning of individuals with ADHD past childhood, research suggests that adolescents and young adults with ADHD remain impaired socially (Bagwell et al. 2001). Overall, the mean differences in peer functioning between ADHD and comparison youth are large in effect size, a magnitude roughly equivalent to the differences in cognitive performance found between ADHD and comparison samples (Hinshaw 1992, 2002).

Distinguishing Friendship from Peer Acceptance and Social Skills

The majority of research about peer relationships in ADHD has examined peer rejection and social skills deficits, but it is important to distinguish between these factors and friendship as separate constructs. Peer acceptance involves being liked by the majority of one's peers and disliked by few and peer rejection is the opposite, being disliked by most and liked by few. Friendship is a close relationship between two children that is mutual and reciprocal. A child may be peer-accepted without having friendships, or have a friendship without being peer-accepted, although the two constructs are correlated. For instance, in a community sample of 881 third through fifth graders, 45% of low-accepted, relative to 82% of average-accepted, and 94% of high-accepted children had at least one friend (Parker and Asher 1993).

However, representing friendship as a unitary construct is also erroneous, as friendships vary in quality, in stability, and in the adjustment of the friend (Hartup 1995, 1996). Regarding quality, some friendships possess positive features such as validation, caring, and trust, while others have negative features such as conflict, antagonism, and competition (Parker and Asher 1993). Positive and negative features in friendships should be assessed separately, as they are often independent of each other (Berndt 1999; Furman 1996). Low-accepted children tend to report more negative and fewer positive features in the friendships they do have relative to high-accepted children (Parker and Asher 1993), but it is possible for a low-accepted child to have a high-quality friendship.

Regarding stability, although the average friendship lasts for about 1 year (Berndt and Hoyle 1985; Degirmencioglu et al. 1998), significant variability exists. In addition, in some long-term friendships the children have consistently been friends, whereas other friendships are marked by repeated, temporary declarations of "I'm not your friend anymore" followed by reconciliation (Schneider et al. 1994). Not surprisingly, stability is predicted by high positive and low negative features in friendship quality (Branje et al. 2007; Ladd et al. 1996). Still, correlations between friendship quality and stability remain modest, which warrants their separate examination (Berndt 1999).

The behavioral adjustment of friend may also be important for characterizing friendships (Hartup 1996). Children tend to befriend peers who are similar to themselves in adjustment, but shared tendencies then become magnified when two similar children interact (Berndt 1999). Thus, two delinquent youth may engage in more delinquency together than either one might do on his or her own (Dishion and Owen 2002), or two youth who are dedicated to school may work more diligently together than alone (Cook et al. 2007). Evidence suggests that poorly adjusted children tend to have friendships that are of poorer quality, and less stable, than are the friendships of well-adjusted youth (Cairns et al. 1988).

Characteristics of Friendships in Youth with ADHD

The aforementioned research about the construct of friendship has largely been conducted among typically developing and community samples. Because youth with ADHD are a population for which peer problems are salient, it is important to consider friendship among children with this disorder. Among ADHD samples, considerably less work has examined friendship, in contrast to the larger body of research devoted to peer rejection and social skills deficits. Nonetheless, all available evidence suggests that elementary school-aged children with ADHD are less likely to have friendships relative to typically developing children (Blachman and Hinshaw 2002; Hoza et al. 2005b).

In a subsample of 165 youth with ADHD and 165 comparison youth in the Multimodal Treatment of Children with ADHD Study (MTA; MTA Cooperative Group 1999), friendships were assessed by sociometric nominations in the classroom where both the child

and the peer had to mutually nominate one another as friends. This sociometric methodology is considered the gold standard (Coie et al. 1982; Gifford-Smith and Brownell 2003). Results suggested that 56% of children with ADHD had no reciprocated friends, 33% had one friend, and 9% had two friends. By contrast, 32% of comparison children had no friends, 39% had one friend, and 22% had two friends (Hoza et al. 2005b). The presence of comorbid Oppositional Defiant Disorder (ODD) or Conduct Disorder (CD) with ADHD was found to predict greater peer rejection but no difference in friendship rates (Hoza et al. 2005b); comorbid anxiety disorders, by contrast, were associated with fewer dyadic friendships but no differences in peer acceptance (Hoza et al. 2005b). However, none of the contrasts between comorbid subgroups remained significant when a Bonferroni correction for multiple comparisons was applied.

Another study using sociometric methodology found that fully 76% of third-grade children with ADHD and comorbid conduct problems had *no* reciprocated friends in their classrooms, relative to 42% of children with elevated internalizing and externalizing symptoms (but not ADHD), and 30% of control children (Gresham et al. 1998). Even in the following school year, similar diagnostic group differences in friendship persisted, such that the children with ADHD and comorbid conduct problems remained significantly more impaired than the other two groups (Gresham et al. 1998). Unfortunately, this study lacked a comparison group of children with ADHD but no conduct problems, or children with ADHD and anxiety symptoms, to which these rates could be compared. Although it is beyond the scope of this paper to review friendship problems among youth with other disorders besides ADHD, it is notable that this study suggested children with internalizing and externalizing behavior problems but not ADHD may be less impaired in friendship relative to their ADHD counterparts (Gresham et al. 1998). This parallels other work suggesting that children with conduct problems but not ADHD often have strong friendships, albeit with other aggressive peers (Cairns et al. 1988), and that internalizing or externalizing behavior alone without ADHD is associated with less peer rejection than is ADHD (Asarnow 1988).

Any friendships that children with ADHD do have may be less stable, and also of lower quality, relative to the friendships of comparison children. Blachman and Hinshaw (2002) reported that preadolescent girls with ADHD were less likely than were comparison girls to maintain stable friendships over a 6-week summer camp period. Again, sociometric methodology was used whereby children and peers had to mutually nominate one another as friends, and a stable friendship was considered to be one in which the same children nominated one another at both intervals, 6 weeks apart. In addition, girls with ADHD self-reported more conflict and relational aggression in their friendships than did comparison girls, although the friendships of girls with ADHD did not appear to differ from those of comparison girls in positive relationship features (Blachman and Hinshaw 2002). However, another study replicated the findings that children with ADHD report more negative features in their friendships, and also suggested the absence of positive features in the friendships of youth with this disorder (Heiman 2005). Specifically, in this predominantly male sample, 45% of comparison children versus only 15% of children with ADHD characterized their friendships as “emotionally supportive” (Heiman 2005). To date, it is unknown how the presence of comorbid ODD, CD, or internalizing disorders, which affect around half of children with ADHD (Jensen et al. 1997), may relate to friendship quality.

Regarding characteristics of the friend, Hoza et al. (2005a,b) reported that children with ADHD do not substantially differ from comparison youth in their selection of friends using sociometric nomination procedures. However, Blachman and Hinshaw (2002) reported that preadolescent girls with ADHD were slightly more likely than were comparison girls to select other ADHD peers as friends. Nonetheless, both studies suggested that the

comparison peers who reciprocate interest in having a friendship with the child with ADHD may be more likely themselves to be low-accepted and to have behavior problems, because popular children do not select children with ADHD as friends (Blachman and Hinshaw 2002; Hoza et al. 2005b). The end result of this process is that children with ADHD, if they have friends at all, appear slightly more likely to have friends who also have ADHD (Blachman and Hinshaw 2002). Similar results have been found using questionnaire methodology, in which adolescents with a history of childhood ADHD self-reported that their friends were less likely to be involved in conventional activities (Bagwell et al. 2001) and more likely to be using substances (Marshall et al. 2003), relative to what typically developing adolescents reported about their friends. The parents of the ADHD sample were also more likely to report that they disapproved of the child's friends (Bagwell et al. 2001). Interestingly, the presence of comorbid CD with ADHD elevated the risk for having deviant friends (Bagwell et al. 2001), but it is unknown how internalizing comorbidities with ADHD may affect friend selection.

The study of friendship in ADHD is less developed relative to the more extensive literature on peer rejection and social skills deficits in this population. Therefore, conclusions about friendship in ADHD are tentative. A search revealed only seven published, empirical studies on this topic (Bagwell et al. 2001; Blachman and Hinshaw 2002; Erhardt and Hinshaw 1994; Gresham et al. 1998; Heiman 2005; Hoza et al. 2005b; Marshall et al. 2003), which are summarized in Table 1. Of these, all assessed the presence of friendship, but only four used the gold standard of peer sociometric methods to do so (Blachman and Hinshaw 2002; Erhardt and Hinshaw 1994; Gresham et al. 1998; Hoza et al. 2005b). Only one examined friendship stability (Blachman and Hinshaw 2002). Two examined friendship quality and both used questionnaire measures to do so, with the child with ADHD (and not the friend or adult informants) as the sole reporter (Blachman and Hinshaw 2002; Heiman 2005). Four considered the characteristics of the friend, using the friend's ADHD status (Blachman and Hinshaw 2002), the friend's sociometric status (Hoza et al. 2005b), and questionnaire measures about the friend's deviant behavior (Bagwell et al. 2001; Marshall et al. 2003).

Although studies with typically developing youth have incorporated observational interactions to assess the positive and negative features of friendships (e.g., Allen et al. 2006b) and the adjustment of the friend (e.g., Dishion and Owen 2002), such procedures have not been used to characterize the friendships of children with ADHD. Yet, there are robust findings that youth with ADHD tend to over-report their own social competence (Hoza et al. 2004)—a phenomenon called “positive illusory bias”. It is notable that the both the studies that collected self-reports of number of friends found no ADHD-comparison differences in this measure as reported by the children themselves, but both parents and teachers of children with ADHD rated these youth as having fewer friends than did parents and teachers of comparison children (Bagwell et al. 2001; Heiman 2005). Therefore, despite findings that children with ADHD self-report poorer friendship quality in their relationships (Blachman and Hinshaw 2002; Heiman 2005), it is likely that their true impairment in friendship quality is underestimated by such measures. As discussed by Normand et al. (2007), the lack of methodologically sophisticated tasks to assess friendship in ADHD is a serious limitation to the current knowledge on this topic.

Another limitation to the existing studies of friendship in ADHD is that very few of them have involved participants outside of middle childhood. This is likely a reflection of the overall under-representation of preschoolers, adolescents and adults in the ADHD literature generally, probably because of difficulties using the existing DSM classifications to diagnose ADHD in these age groups (Barkley et al. 2002; Lahey et al. 2005). However, research in typically developing samples suggests that even preschool children have clear, stable friend preferences (Howes 1996). In addition, the literature proposes that it is

normative for friendships to deepen and to grow in importance in adolescence (Buhrmester 1990). Harry Stack Sullivan (1953) thought that the developmental process of increasing the intimacy and closeness in best friendships during the adolescent period sets the stage for healthy romantic relationships later.

Bagwell et al. (2001) and Marshal et al. (2003) suggest that, at least based on youth self-report and parent report, individuals with a history of ADHD in childhood may be more likely, as adolescents, to have poorly adjusted friends who are involved in deviant activities. However, missing are studies using sociometric or observational methodology to assess friendship patterns among adolescents with ADHD. Given findings that college-age students with ADHD may struggle with romantic relationships (Canu and Carlson 2003), it is intriguing to consider whether an inability to maintain close friendships in adolescence, as theorized by developmental researchers, may predict later interpersonal difficulties in ADHD populations.

Skills Necessary for Friendship and the Impact of ADHD Symptoms

The developmental literature suggests a core set of social skills necessary for successful friendship. Although this work has been predominantly, if not exclusively, based on studies with typically developing and community samples, there are theoretical reasons why children with ADHD should show impairment in these skills. Empirical work provides initial support for the conjecture that children with ADHD are in fact impaired in friendship skills and that such impairments may contribute to the lower rates of dyadic friendship in ADHD populations.

Developmental research emphasizes children's ability to make self-disclosures, to express caring and admiration, and to be comfortable with intimacy, as essential to fostering close friendship (Asher et al. 1996; Buhrmester 1990; Schneider et al. 1994). The importance of emotional connection for friendship increases from childhood to adolescence (Buhrmester 1990), but notably, even children between the ages of five to seven have more intimacy and support in their friendships than they do in their relationships with acquaintances whom they like but with whom they are not friends (Berndt and Perry 1986; Gottman 1983). Further, it is expected that children will support their friends in an altercation with a third party; this type of emotional loyalty may be more valued than being supportive when a friend shares a secret (Bukowski et al. 1987). Children must also recognize the "spirit of equality" that is at the heart of friendship, and resolve conflicts equitably and with empathy for the other person's perspective (Asher et al. 1996; Parker et al. 1995). Finally, children must be knowledgeable, fun, and fair when playing games suited for two children (Frankel and Myatt 2003). Although presumably these skills will not merely lead to the presence of friendships, but also to friendships high in quality and stability, this differentiated hypothesis has not been tested.

It is thought that the aforementioned skills are more important for the specific development of dyadic friendships relative to peer acceptance (Asher et al. 1996; Buhrmester 1990; Schneider et al. 1994). Self-disclosure and intimacy are not pertinent (or necessarily appropriate) to achieving the overall positive regard of the peer group at large, which is necessary for peer acceptance. However, to create a mutual, close relationship between two children, an emotional supportiveness and reciprocal understanding of the other person is key. Whereas peer acceptance may be predicated on children behaving appropriately and conforming to social norms in groups such as in the classroom setting, research suggests that dyadic friendships primarily develop during one-on-one interactions outside of the larger peer group such as playdates at one child's house (Ladd 1990; Ladd and Hart 1992).

Therefore, competence in playing games suited for two children, and staying loyal to a play partner, may be more important for friendship relative to peer acceptance.

Conceptual theories of ADHD provide rationale for why children with this disorder may evidence difficulty in such friendship skills. Barkley (1997) proposed that a deficit in behavioral inhibition is core to ADHD; inability to constrain impulsive responses leads to compromises in working memory, self-regulation of affect/motivation/arousal, internalization of speech, and reconstitution. Theoretically, these problems may impact friendship skills in several ways. Most relevant may be children's affect and arousal regulation, because good modulation of one's own emotional reactions is required to connect emotionally with a friend. The ability to match the affect and arousal of a friend promotes intimacy. Additionally, deficits in planning/organization and working memory make it difficult to juggle multiple pieces of information, which may compromise the ability to understand that a friend's perspective is different from one's own. Perspective-taking is essential for being supportive of a friend's needs, resolving conflicts with consideration of the friend's feelings, and being loyal to a friend. Research suggests that emotion regulation, planning/organization, and working memory deficits are evident in ADHD, and crucially, that such deficits may mediate the relationship between ADHD status and poor peer functioning (Huang-Pollock et al. 2009; Maedgen and Carlson 2000). However, no research has investigated the effect of these deficits on *friendship* (as opposed to social competence more generally).

It is important to note that controversy exists regarding whether the behavioral inhibition theory of ADHD applies to children with ADHD-combined type (ADHD-C) only, or whether it extends to those with ADHD-Inattentive Type (ADHD-I). Barkley (1997) as well as other researchers (Diamond 2005; Milich et al. 2001) have hypothesized the former, stating that the primary deficit in ADHD-I is not difficulty with inhibition but rather trouble with focus, motivation, and arousal; yet, other empirical studies have found equal inhibitory control deficits using neuropsychological tasks in both ADHD-C and ADHD-I (e.g., Chhabildas et al. 2001; Huang-Pollock et al. 2007). However, children with ADHD-I have been vastly understudied in the literature relative to their ADHD-C counterparts. Whereas emotion regulation deficits were only found to mediate peer functioning in children with ADHD-C and not ADHD-I (Maedgen and Carlson 2000), problems with response inhibition, planning, and working memory equally predicted social problems for children with both subtypes of ADHD in another study (Huang-Pollock et al. 2009).

Only one of the studies listed in Table 1 examined friendship among youth with ADHD-I in addition to ADHD-C. Blachman and Hinshaw (2002), using a sample of 228 girls in a research-based summer camp, found that both girls with ADHD-C and ADHD-I showed fewer friendships and less friendship stability than did comparison girls. However, post hoc probing revealed that whereas the girls with ADHD-C demonstrated initial difficulty in establishing friendships, the problem for those with ADHD-I was in maintaining friendships once established (Blachman and Hinshaw 2002). In contrast to findings that children with ADHD-I may be less peer-rejected relative to children with ADHD-C (Milich et al. 2001; Piffner et al. 2000), these two ADHD subtypes may have equal impairment in friendship.

The pattern of subtype differences in peer rejection versus friendship may occur because youth with ADHD-C tend to show intrusive, aggressive behaviors in peer situations, whereas youth with ADHD-I display fewer disruptive behaviors but instead appear socially withdrawn and uninterested (Hodgens et al. 2000; Mikami et al. 2007). Although the *absence* of aggressive behavior may be sufficient to prevent disliking by one's peers, the *presence* of the skilled behaviors of intimacy, perspective-taking, and active engagement in

games suited for two children, may be required for friendship. This conjecture is supported by findings in a sample of previously unacquainted boys with ADHD (all ADHD-C); whereas observed aggression predicted both more peer rejection and lack of friendship, the presence of observed prosocial overtures to peers was only found to be associated with friendship but not peer rejection (Erhardt and Hinshaw 1994). Thus, because both ADHD subtypes lack these friendship skills and predominately differ on the presence of disruptive behavior, children with ADHD-I may be less peer-rejected, but may display equal impairment in friendship as do children with ADHD-C. However, these preliminary findings bear replication.

Gender is also important to consider in regards to friendships. Investigations suggest strong sex-segregation from an early age, such that children's best friendships are usually formed with individuals of the same gender (Maccoby 1998). Although boys may interact in larger social networks of acquaintances than do girls, the number of close friendships may actually be similar for both sexes (Rose and Asher 1999, 2004). Characteristics of friendships may differ slightly between genders, with girls placing a higher premium on intimacy, self-disclosure, emotional closeness, verbal social conversation, and helping behaviors, relative to boys of the same age (Rose and Rudolph 2006). By contrast, boys' friendships may be marked by shared activities, competition, a dominance hierarchy, and rough and tumble play to a greater extent than are the relationships of girls (Rose and Rudolph 2006). It is thought that these sex differences in friendship may occur because of differential socialization and because girls achieve advanced cognitive and verbal skills at earlier ages relative to boys (Keenan and Shaw 1997; Maccoby 1990). Nonetheless, both boys and girls do prioritize intimacy, emotional support, helping, and shared activities in friendships, and both genders show more of these behaviors with friends relative to with acquaintances whom they like but with whom they are not friends (Rose and Asher 1999, 2004; Rose et al. 2009). In addition, there is a normative developmental process by which both sexes show similar increases in intimacy and closeness, and a more equitable division of power in friendships as they age from early to middle childhood, and then again through adolescence (De Goede et al. 2009).

The existing ADHD literature has significant under-representation of females (Hinshaw 2002; Mikami and Hinshaw 2008), far exceeding the gender imbalance in this disorder of 3:1 boys:girls (American Psychiatric Association 2000). However, all available evidence suggests that girls with ADHD are suggested to have at least as many difficulties in peer relationships, if not more, than do boys with ADHD (Gaub and Carlson 1997; Mikami and Hinshaw 2003; Ohan and Johnston 2007). Studies specifically focusing on friendship in girls with ADHD are rare. In the subsample of the children participating in the MTA Study (79% male), there were no sex differences in friendship, with both boys and girls strongly (and equally) impaired (Hoza et al. 2005b). Blachman and Hinshaw (2002) found friendship impairment among girls with ADHD relative to comparison girls, but lacked a group of boys to which findings could be integrated. The other studies about friendship and ADHD listed in Table 1 either contained too few girls to conduct gender comparisons (Bagwell et al. 2001; Erhardt and Hinshaw 1994; Marshal et al. 2003), or did not report such information (Gresham et al. 1998; Heiman 2005).

Although this has not been empirically tested, it is speculated that the symptoms of ADHD may interfere to a larger extent with the close friendships of girls relative to boys. Trouble with self-regulation of affect and arousal, planning/organization problems, and working memory difficulties are theoretically more likely to interfere with the higher verbal give-and-take, focus on reciprocity, and emotional intimacy that characterizes females' interpersonal interactions (Mikami and Hinshaw 2003, 2008). In addition, because the disorder is more statistically rare in females, a girl with ADHD symptoms will be perceived as more deviant relative to a boy with similar ADHD symptoms. Because departing from

group norms has been found to impact peer acceptance and friendship patterns after statistical control of the child's behaviors (Chang 2004; Mikami et al. 2010), girls with ADHD may be more likely to suffer social ostracism. Finally, girls with ADHD may warrant greater concern in general, as the theoretical perspective known as the "gender paradox" posits that the less-prevalent sex with a given disorder shows greater impairment than the more prevalent sex (Eme 1992).

Developmental Significance of Friendships on Adjustment

Prospective longitudinal studies from school-based and community samples support the conclusion that friendships in childhood make an incremental contribution to adaptive functioning in adolescence and adulthood. In a transition to a new school, a consistent finding is that having friendships predicts increased self-esteem and academic engagement, and reduced behavior problems (Berndt 1999; Hartup 1996; Tomada et al. 2005). However, few studies have compared the relative predictive power of friendship versus peer sociometric status on adjustment. Importantly, peer rejection has been found to be a consistent predictor of adolescent school failure, internalizing behavior, and (to a lesser extent), externalizing behavior, even after controlling for original childhood levels of these problems (Buhs and Ladd 2001; Miller-Johnson et al. 2002; Ollendick et al. 1992; Parker and Asher 1987; Pedersen et al. 2007). Yet, whether friendship and peer sociometric status may interact together to predict youth's adjustment is an understudied question.

There are theoretical reasons why the presence of friendship may reduce risk for negative outcomes, even if the child continues to be rejected by the larger peer group. Having a friend provides youth with interaction opportunities where they must learn to resolve conflict, have patience, and develop perspective-taking and empathy (Buhrmester 1996; Hartup and Stevens 1997; Ladd 1981)—activities which socialize children toward being productive, contributing members of adult society. Further, children who have a close friend are likely to be less lonely (Qualter and Munn 2002), and the presence of even one friend may reduce rejected children's risk for being targets of bullying (Buhs et al. 2006; Schwartz et al. 1999). In fact, it has been hypothesized that whether or not a child has close friendships may better predict resilient adjustment than that child's overall acceptance in the peer group at large (Schneider et al. 1994).

In support of these conjectures, children with friends, relative to friendless children, were found to have higher altruism and better affective perspective-taking, regardless of children's peer sociometric status as accepted or rejected (McGuire and Weisz 1982). Bagwell et al. (1998) found that having even one reciprocated friend in the fifth-grade buffered children's risk for negative outcomes 12 years later, after statistically accounting for children's peer rejection in the fifth grade. Other work following youth from middle childhood to early adolescence has reported that whereas peer-rejected children were at elevated risk for subsequent internalizing problems, the presence of a friendship mitigated this effect (Oh et al. 2008; Pedersen et al. 2007). Another study found that victimization experiences predicted increases in problem behaviors across a school year only for children who lacked friendship, and not for children who had a friend (Hodges et al. 1999).

Existing literature has not distinguished well between having friends, friendship quality, friendship stability, and characteristics of the friends. Presumably, the protective effect of friendship would occur primarily, if not exclusively, for children who have high quality, stable friendships with well-adjusted peers (Hartup and Stevens 1997). Although high friendship quality (Allen et al. 2006a; Larsen et al. 2007) and also friendship stability (Berndt and Keefe 1995) have been cross-sectionally correlated with adjustment, there are no longitudinal studies that compare these friendship constructs in the same sample. Among

adolescents, evidence suggests that friends influence one another to become more similar by responding positively to actions by their friend that match their own behavior (Berndt 1999; Dishion and Owen 2002). If friends are well-adjusted, then this process can encourage good adjustment, but if friends are high in externalizing or internalizing behavior, these friends' characteristics may instead promote increasing behavior problems (Dishion et al. 1999; Oh et al. 2008). The influence of friends' characteristics, whether positive or negative, may be the strongest when a friendship is stable and high in quality (Berndt et al. 1999; Berndt and Keefe 1995)—making it crucial to examine all aspects of friendship to obtain a complete model of how friendship influences adjustment.

It is important to note that, although both peer acceptance and friendship have been shown to affect well-being across many stages of development, their relative impact may differ by age. In their review of the literature, Gifford-Smith and Brownell (2003) concluded that peer acceptance is most critical to healthy adjustment in early childhood but it decreases in importance thereafter; by contrast, friendships increase in importance from middle childhood through adolescence (Buhrmester 1996). Longitudinal studies with multiple assessment points investigating the temporal ordering of peer rejection, friendship, and adjustment are extremely rare. Pedersen et al. (2007) reported a best-fitting model that behavior problems at ages 6–7 predicted peer rejection at ages 8–9, which then predicted few friendships at ages 10–11. Lack of friendships, but not rejection, then predicted depressive symptoms at ages 12–13. In sum, early peer acceptance may be useful for fostering the development of dyadic friendships in middle childhood, which may ultimately carry greater weight than does peer rejection in encouraging good adjustment in adolescence and young adulthood.

Relevance of Friendship for Adjustment of Youth with ADHD

Children with ADHD are at risk for poor future adjustment in domains similar to those experienced for children with peer relationship difficulties: externalizing and internalizing behavior, school failure, and substance abuse (Barkley 1998; Hinshaw et al. 2006; Mannuzza and Klein 1999, 2000). Moreover, the risks of peer problems and ADHD appear additive. Boys with ADHD who had peer problems showed more criminality, depression, anxiety, and substance use in adolescence than did boys with ADHD without peer problems; both groups were at higher risk for these negative outcomes than were boys without ADHD (Greene et al. 1997). In a sample of girls, childhood peer rejection and ADHD status made independent contributions to predicting greater adolescent school failure, externalizing and internalizing behaviors, and bulimia nervosa symptoms (Mikami and Hinshaw 2006; Mikami et al. 2008).

Thus, children with ADHD are already at risk for negative outcomes in adolescence and adulthood, and that risk may increase if they also have peer problems. However, to date, it remains entirely unknown how the presence of friendship, the stability of friendship, or the quality of friendship may affect the longitudinal adjustment of youth with ADHD, or may mitigate the negative effects of peer rejection. Based on the promising findings among typically developing children, researchers have speculated that encouraging good friendships among children with ADHD may buffer negative future outcomes (Hoza 2007; Mrug et al. 2001; Normand et al. 2007). However, this hypothesis has never been empirically tested.

The characteristics of the friends of youth with ADHD are important to consider. If youth with ADHD are more likely to befriend peers who have adjustment problems themselves (Blachman and Hinshaw 2002; Hoza et al. 2005b), then the potential exists, particularly in adolescence, for these peers to encourage increases in maladaptive behavior among the

children with ADHD. In fact, one study found that the prospective association between childhood ADHD and adolescent substance abuse was mediated by the likelihood of youth with ADHD to have developed associations with deviant friends (Marshal et al. 2003).

Yet, there is reason to believe that if a child with ADHD can establish good friendships, this child may receive more benefit, in terms of positive subsequent adjustment, from these friendship experiences than will a typically developing child. In addition to their difficulties with peers, children with ADHD often have conflictual relationships with their families (Johnston and Mash 2001; Mikami and Pfiffner 2007). Based on research suggesting that the buffering effect of friendship is strongest for typically developing youth who have poor parent-child relationships (Henrich et al. 2006; Larsen et al. 2007; Stocker and Richmond 2007), good friendships may make the most substantive difference for the population of children with ADHD. Supporting this idea, related research suggests that once in a deviant peer network, boys with ADHD are more vulnerable to the antisocial influences of those friends than are comparison boys (Marshal et al. 2003); again, this may occur because comparison boys have positive relationships with family to counteract the effects of poorly adjusted friends.

In summary, missing from the current literature are prospective longitudinal studies that examine friendship, in addition to multiple other aspects of social competence such as peer rejection, as a predictor of changes in adjustment over time in ADHD populations. The aspects of friendship quality, stability, and the adjustment of the friend should also be incorporated into the model. Finally, because of work with typically developing samples suggesting an increase in the importance of friendship in the end of middle childhood and through adolescence, research might examine this particular time period among youth with ADHD. Entirely unknown are the ways in which close friendship during this period may set the stage for later romantic relationships, as has been hypothesized in normative developmental theory.

Parental Influences on Children's Friendships

The majority of research on friendship, similar to as is the case in peer relationship research in general (Mikami et al. 2010), has focused on the behaviors and skills children possess that lead them to develop good friendships, or conversely, to remain friendless. Although this perspective has contributed richly to the field's understand of friendship, it ignores other factors in the social context outside of the child that could also influence the development and maintenance of a close friendship. One such factor is the child's parents.

Developmental researchers have postulated that parents affect their children's social competence generally, without distinction regarding parental influences on friendship relative to on peer acceptance or social skills (McDowell and Parke 2009; Parke et al. 1994; Prinstein and La Greca 1999). Nonetheless, there is theoretical reason to believe that parents may in fact have a *greater* influence on their children's friendships relative to on other aspects of peer relationships. Existing work (Frankel 1996, 2003; Frankel and Myatt 2003; Ladd and Hart 1992) suggests that playdates (prearranged play sessions between children, outside of school or organized activities, typically held at one child's house) are the cornerstones of friendship development among preadolescent children. No matter how much children interact in organized activities, they are unlikely to develop and maintain a close friendship without spending significant one-on-one time together on playdates (Ladd and Hart 1992). By contrast, contexts such as the classroom or recess, in which the child interacts with the larger peer group, may be more important for determining peer acceptance. Crucially, parents (usually mothers) serve as managers and supervisors of preadolescent children's playdate schedules (Parke et al. 1994). Given that the context in

which parents are most likely to be involved in their children's peer relationships is during dyadic playdates, it stands to reason that parents may have substantial influence on children's friendships relative to peer acceptance.

The parent's sheer arrangement of playdates for her child may be essential to fostering her child's friendships. Preliminary support for this hypothesis comes from findings (with typically developing samples) that the frequency with which parents set up playdates for their children is positively correlated with children's friendship behaviors (Ladd and Hart 1992), and that mothers of children nominated by teachers as "having few friends" were observed to less often facilitate introducing their children to previously unacquainted peers (Finnie and Russell 1988; Russell and Finnie 1990). In a prospective study of 138 youth ages 12–14 that had recently moved to a new community, the amount that the mother arranged activities for the adolescent and potential friends predicted greater companionship and intimacy in youths' friendships 8 months later (Vernberg et al. 1993). Nonetheless, more longitudinal work and/or intervention work that experimentally increases parents' playdate arrangement would provide more compelling evidence for these hypothesized pathways.

Crucially, the ability of the parent to set up playdates for her child is not only related to the child's social competence, but also to the *parent's* social competence. Although preadolescent children ask their parents for playdates with particular peers, the reverse process occurs in which parents initiate playdates with the children of their own adult friends (Howes 1996). Even if two children like one another, research suggests that a playdate will not be arranged unless the parents know one another and both think that the other child comes from a "nice family with a likeable mother" (Howes 1996).

Another way that parents may assist their children with making friends is through providing instruction to their children about skilled behavior (Parke et al. 1994). One study found that mothers of children with friends, relative to mothers of friendless children, were observed to have explicit discussions with their child before a lab-based peer interaction regarding appropriate behavior; when asked what they would say to their child after the interaction, these mothers more often reported they would debrief with their child about his or her performance, although this was not observationally measured (Russell and Finnie 1990). Parents who intervene when boredom and conflict are occurring on playdates may also increase the likelihood that a good friendship will develop (Frankel et al. 1997). Again, it is typical for parents (usually mothers) of preadolescent children to be present during playdates—at least within earshot if at home, and in the same physical location if the playdate occurs away from home in a public place (Frankel et al. 1997; Ladd and Hart 1992). Thus, the parent's natural proximity to the child and the peer makes playdates an ideal venue during which parental coaching in friendship skills may occur.

It is important to note that most of the research about parental influences on children's peer relationships has involved only mothers, or too few fathers to make comparisons by parent sex. In their model, Parke et al. (1994) did not theorize mother–father differences in influence on peer relationships. However, given that mothers are more likely than fathers to manage the child's playdate schedule and to didactically instruct the child in social skills, this may explain some research findings that mother–child relationships, but not father–child relationships, were predictive of child peer competence (Attili et al. 2010). On the other hand, because fathers tend to play more with their children than do mothers, it is possible that fathers may also influence their child's peer competence through modeling appropriate playdate behavior (NICHD Early Child Care Research Network 2009). Again, none of the work on mother versus father influences has examined such influences on children's friendships, as opposed to on children's social competence more generally.

Little is known about the effects of parental behaviors on the friendships of children with ADHD. Unfortunately, there are theoretical reasons why parents of children with this disorder may struggle with helping their children make friends. Some parents of children with ADHD are impaired by their own ADHD symptoms (Hechtman 1996) or other psychopathology such as depression (Chronis-Tuscano and Clarke 2008), which impede parents' capacity to plan playdates and to model appropriate social behavior for their children. Parent-child relationships in this population are frequently conflictual (Johnston and Mash 2001), restricting parents' ability to instruct children in friendship-making skills in a way in which the children would be receptive. Finally, parents struggle with their children with ADHD over homework, chores, and morning routine, each of which children with ADHD complete slowly (Pfiffner and McBurnett 1997), which limits the time parents have to enact friendship-encouraging strategies.

Mikami et al. (in press-a) found that parents of children with ADHD, relative to parents of age- and sex-matched comparison children, self-reported having lower social competence of their own and arranging fewer playdates for their children. They were also observed to be more critical of their child after a lab-based peer interaction meant to simulate a playdate, after statistical control of a host of covariates including the child's observed aggression during the interaction. The authors posited that parents of children with ADHD may struggle, relative to parents of comparison children, to create positive playdate opportunities for their children and to coach their children in friendship skills in a manner that is likely to lead to children's receptivity. Parents' own social competence, socializing with other parents, arrangement of playdates, facilitation of the child's peer interactions in the lab-based interaction, and warmth also predicted their children having good peer relationships as assessed by parents, teachers, and peers. Intriguingly, the effects of the parental behaviors on children's peer relationships were stronger for youth with ADHD than for comparison youth.

Treatment Implications of a Focus on Friendship for Children with ADHD

Despite the public health significance of mitigating peer problems in ADHD, the field has made only circumscribed progress toward developing interventions that achieve this goal (Landau et al. 1998; Mrug et al. 2001). Interventions have had greater success in improving children's appropriate behavior in peer situations. For instance, the first-line treatments for ADHD, stimulant medication and behavioral contingency management, reduce children's aggressive, intrusive, and disruptive behaviors with peers (Chronis et al. 2006; Hinshaw et al. 1989) and may result in parents and teachers rating children's social skills as improved following treatment (Klein and Abikoff 1997). In behavioral management interventions, parents and teachers create a contract with children where identified target behaviors are listed and monitored at regular intervals. Rewards and response cost procedures are typically used to reinforce children's display of the target behaviors (Chronis et al. 2006).

In social skills training, children are didactically instructed in appropriate behaviors thought to lead to good peer relationships, such as entering a new peer group, conversation skills, and naming emotions. Often, groupbased methods are used where children learn target skills, practice the skill using role plays with peers, and receive feedback about their enactment of the skill (Chronis et al. 2006). Although some social skills training programs for children with ADHD have yielded positive results where parents and teachers report improvements in appropriate behaviors (Pfiffner et al. 2000; Pfiffner and McBurnett 1997), other investigators have not found social skills training to be useful for this population (Abikoff 1985; Barkley 2004; de Boo and Prins 2007; Mrug et al. 2001; Pelham et al. 1998). Nonetheless, a common problem for medication, behavioral management, and social skills

training treatments is children's failure to generalize skilled behaviors to situations after treatment has ceased or where treatment is not provided (Abikoff 2009; Mrug et al. 2001).

Existing interventions have considerably more difficulty with demonstrating a corresponding reduction in children's peer rejection after treatment, particularly when rejection is assessed via sociometric nominations where peers name the children whom they like and dislike (Landau et al. 1998; Landau and Moore 1991; Mrug et al. 2001). In the MTA Study (MTA Cooperative Group 1999), both intensive medication and behavioral management, alone or in combination, failed to increase peer reports of acceptance at the immediate conclusion of the 14-month active treatment period, although treatments produced gains in adult informant-reported social skills (Hoza et al. 2005a). Although very few medication, behavioral management, or social skills training interventions have examined effects on friendship specifically, in this particular study, these same MTA treatments also failed to increase the likelihood that youth with ADHD would have dyadic friendships (Hoza et al. 2005a). Relative to a matched sample of comparison youth, children with ADHD remained profoundly impaired in their peer relationships, no matter which treatment they had received. Other research has compared social skills training programs to no treatment and failed to find improvement in peer rejection (Abikoff et al. 2004; Antshel and Remer 2003; Kolko et al. 1990).

Some exceptions exist where, in small samples, children receiving stimulant medication (Whalen et al. 1989) and behavioral management (Pelham and Bender 1982) have improved in peer-reported acceptance after treatment. Nonetheless, in both these studies, peer relationships were far from normalized. These positive outcomes must also be considered in light of a larger collection of null effects on peer-reported measures (Hoza et al. 2005a; Landau et al. 1998; Landau and Moore 1991; Mrug et al. 2001). On the basis of these findings, some investigators have concluded that peer problems may be the most intractable domain of impairment in ADHD (Hoza 2007; Landau et al. 1998; Mikami and Pfiffner 2006). In light of the difficulties with changing peer acceptance, the field might consider interventions specifically focused on friendship. This call has been shared by other ADHD investigators, with the rationale that if changing peer acceptance is too difficult or unrealistic, then fostering friendship may be a good alternative (Hoza et al. 2003; Normand et al. 2007).

There are conceptual reasons why existing treatments for youth with ADHD may not lead to improvements in peer acceptance, and in each case, refining a treatment to have a targeted focus on friendship may have the potential to address the difficulty and lead to friendship gains. First, social skills training may attempt to teach too many aspects of social competence at the same time (e.g., skillful behavior with both adults and peers in the classroom, at lunch, on a sports team, and on playdates). Similarly, behavioral management interventions may try to increase appropriate behaviors across the board in all social situations. The result may be that children achieve less than they would in an intervention targeting one behavior in a single type of interaction. It can additionally be difficult to teach the behaviors that result in peer acceptance because such behaviors differ depending on the age and sex of the peers, whether the child is engaging with a smaller or a larger peer group, whether it is during class or at recess, what has just occurred in the conversation, the dynamics of who likes whom in the group, and the history between the target child and the peers. The core deficit of behavioral inhibition is thought to impede children with ADHD from enacting rule-governed behavior and make them more dependent on environmental contingencies (Barkley 1997; Huang-Pollock et al. 2009); particularly because social rules are complicated, this is likely a major obstacle to existing psychosocial interventions that attempt to instruct children with ADHD in social skills. Simplifying instruction to the interactions in close dyadic friendships—which tend to occur in one-on-one interactions on

playdates—may allow designation of clearly defined behaviors (and reinforcement of those behaviors) that lead to success in that specific context.

Second, the method of instruction in social skills training may be ill-tied to the actual impediments faced by youth with ADHD (Abikoff 2009). Social skills training emphasizes teaching knowledge about appropriate behaviors. However, the theoretical model of behavioral inhibition deficits in ADHD holds that the primary barrier may not be a lack of knowledge about what behavior they should do, but rather the inability to actually perform skilled behavior in the heat of the moment because of problems stopping competing impulses (Barkley 1997; Pfiffner et al. 2000). Note that this may be less true for youth with ADHD-I who might need instruction to increase knowledge about engagement and assertion with peers (Pfiffner et al. 2007). It is common for children with ADHD to demonstrate skills in session but fail to generalize skills to peer situations outside of therapy or once treatment has concluded, which is viewed as evidence that performance deficits are pertinent (Abikoff 2009; Chronis et al. 2006). Clinically, children with ADHD have been observed to leave a social skills training session during which they successfully practiced “negotiation during conflicts,” and then fight about seating arrangements on the bus during the ride back home (Abikoff and Gittelman 1985). Following from the model of behavioral inhibition, effective interventions for ADHD populations must build in strong contingent reinforcements and reminders to inhibit competing, unskilled impulses in real world peer situations (Barkley 1997; Pfiffner et al. 2000).

Interventions specifically designed to promote friendship may increase the probability that generalization outside of treatment will be achieved. This is because, as discussed earlier, friendship interventions can capitalize on a parent’s natural proximity during playdates, the context in which friendships develop. There is growing consensus that the effectiveness of life skills interventions for children with ADHD may be strengthened if parents are actively informed on a weekly basis to reinforce the child’s display of skills in out-of-session contexts (Frankel et al. 1997; Pfiffner and McBurnett 1997; Pfiffner et al. 2007; Reitman et al. 2005). During playdates, parents are available to remind the child about appropriate friendship-making behaviors and reinforce the child’s display of friendship skills. By contrast, parents have limited involvement in the child’s classroom or recess activities, which are the contexts in which peer acceptance is more likely to be determined.

A final problem relates to the findings that even when a child does display improved social behaviors as rated by adult informants as a result of medication, social skills training, or behavioral management, changes in peer acceptance may not follow. It may be that adults are aware of the treatment delivered, resulting in biased ratings of improvement. However, adults may also be recognizing real changes in behaviors that do not matter to peers. For example, adult-informant rating scales commonly used to document treatment outcome such as the Social Skills Rating System (SSRS; Gresham and Elliott 1990) contain items such as “offers to help out around the house without being asked”— behaviors that may reflect social competence to an adult, but which are unlikely to affect peers’ opinions. A focus on behaviors germane to friendship, selected to be those actions that determine peer regard in that situation, may address this problem because such behaviors are limited and specific.

Another possible explanation is that entrenched negative reputations of children with ADHD may make peers resistant to ever changing their perceptions about that child (Hoza 2007; Hymel et al. 1990). As discussed in the review by Mikami et al. (2010), peers are known to negatively interpret ambiguous behaviors of classmates they do not like and to selectively remember bad behaviors of those classmates while forgetting prosocial behaviors. Biased peer perceptions have specifically been demonstrated for peers’ judgments of children with ADHD (Harris et al. 1992). The cognitive biases held by peers against disliked children

make sociometric acceptance difficult to increase, because it is dependent on shifts in the perceptions of an entire classroom of peers. It may be unrealistic for a child with ADHD to have the quantity of sustained positive interactions with all classmates that is needed to disconfirm that child's negative reputation in the eyes of peers. However, friendship requires a more circumscribed goal of changing the perception of only a single peer, and repeated, close interactions with that peer on playdates is realistic. Disconfirming a negative reputation in the eyes of one friend may be more achievable.

Key Components to a Friendship Intervention for Children with ADHD

The development of friendship-focused interventions remains in early stages. There are *no* existing empirically supported interventions for friendship (as opposed to for social skills, peer rejection, or social competence more generally). Notably, this is true for both typically-developing youth and ADHD populations. Asher et al. (1996) have argued that the study of friendship is less advanced than the study of peer acceptance, but that these constructs have been conceptually distinguished enough such that interventions specifically targeting friendship should be designed.

Promising approaches exist among ADHD populations that may inform further development of friendship interventions. Hoza et al. (2003) conducted a pilot intervention in a well-established behavioral summer treatment program for elementary school-age children with ADHD (Pelham and Hoza 1996). The investigators paired children with ADHD together as "buddies" on the basis of common interests and skills, and attempted to foster a friendship by hosting shared activities for the dyads. Parents were encouraged to continue the relationship between the two children outside of camp hours. Although the children involved appeared to develop friendships, the intervention was delivered to the entire summer program. Therefore, intervention effectiveness was not evaluated relative to a no-treatment control group, nor was it possible to separate the effects of the buddy intervention from the potentially beneficial effects of the summer program (Hoza et al. 2003).

Frankel et al. (1997) reported that children with ADHD (ages 6–12) benefited from an intervention that had some components geared toward dyadic friendship. Children were administered a group-based social skills training while their parents attended parallel sessions in which they were instructed in how to reinforce what their children were learning. However, results were assessed using adult-informant ratings of social skills, not peer reports or observational measures of friendship formation, friendship quality, friendship stability, or the adjustment of the friend. Similarly, Mikami et al. (in press-b) trained parents of children with ADHD (ages 6–10) to coach their children in development of social competence, some components of which addressed friendship, such as behaviors on dyadic playdates. In this intervention, parents alone were instructed and children were not involved. Results from parent and teacher ratings suggested that children whose parents participated increased in social competence, but improvement was not found on peer-reported measures, and neither was friendship explicitly assessed. To date, no intervention study has broken down the friendship components of stability, quality, and association with non-deviant peers—three factors important in characterizing the impact of friendships on children's adjustment (Hartup 1996). In sum, the time is right for targeted, carefully constructed interventions to promote friendship. Such interventions appear promising for ADHD populations, yet further study is needed.

On the basis of existing work, a friendship intervention for children with ADHD would require several components to increase the likelihood of efficacy: (1) consideration of selection of friends; (2) focus on specific friendship behaviors in key situations; and (3) high parental involvement. First, a successful intervention must give thought to how to match

children as friends. Therapists might pair the children, or else a more generalizable model might involve training children and parents to identify potential friends in their existing network. The selection of the friend is important because of research suggesting that even if two children basically like one another, a close friendship will not develop between two children who fundamentally do not enjoy any of the same activities (Ladd and Emerson 1984). Sharing similar play interests is crucial for young children, whereas shared attitudes, in addition to activities, become increasingly important for the friendships of older youth (Furman and Bierman 1983). However, because of the potential for deviant peer associations to exacerbate the maladjustment of both children involved in the friendship, careful attention to selecting a nondeviant peer will also be important for children with ADHD. This concern about negative peer contagion effects is probably most relevant in adolescence. However, it should be acknowledged that the normative developmental process of adolescents' establishing autonomy from adults will make it more difficult for either parents or therapists to intervene during this age. Clinically, it might be wise to promote good friendships when children are younger, with the hopes that these relationships will continue. When considering teenagers, parents and therapists must judiciously encourage friendship pairings without depriving the adolescent of feelings of autonomy.

It is difficult to conjecture whether or not children with ADHD should seek friends who also have ADHD. To the extent that two children with ADHD may have similar interests and play styles, and if both parents may therefore better know how to manage the behavior problems that are commonly associated with this disorder, an ADHD-ADHD friendship pairing may work well. However, to the extent that children encourage one another to engage in antisocial or destructive behaviors, then this pairing should be avoided. The bottom line is that proactive attention to the choice of the friend is needed, and is particularly important for youth with ADHD who do not naturally make friends with most any peer.

Second, the intervention must train children how to behave during those specific situations central to deepening dyadic friendships, as opposed to attempting to enhance social competence or appropriate behaviors more generally in all contexts, as is typically done in social skills training and behavior management interventions. Given that playdates are key for the development and maintenance of friendships (Ladd and Hart 1992), friendship training might be localized around the friendship behaviors children demonstrate during dyadic playdates, as opposed to in other situations. Gottman (1983) reported that, based on naturalistic observations of previously unacquainted preschool- and kindergarten-age child dyads on playdates at one child's home, the dyads who went onto develop friendships were those that displayed cooperative play, reciprocity, emotional support/intimacy, and self-disclosure early on. As discussed by Asher et al. (1996), these skills are more instrumental for developing close friendships than for peer acceptance. Because friendships grow in importance during adolescence and because emotional bonds in friendships become more prominent, there is reason to think that adolescents with ADHD would benefit from similar training in friendship skills. However, given adolescents' value on autonomy, the therapist must consider collaborative ways of instruction, or utilize peer models of instruction. Crucially, scholars have written about the usefulness of such therapeutic methods for overcoming resistance among adolescents with ADHD to interventions not specific to friendship (Evans et al. 2008).

Finally, given research suggesting the importance of parents in their preadolescent children's playdates, parental involvement will also likely be instrumental to include in an intervention. Parents might be instructed in how to arrange playdates for their children and to prevent boredom and conflict on the playdate (Frankel et al. 1997). Parents might also be trained to use a procedure by which they teach their child a friendship skill, observe their

child practicing that skill on a playdate, and provide feedback about the child's performance (Parke et al. 1994). Notably, this instructional procedure is similar to that used by therapists in social skills training. The key difference is that parents (as opposed to therapists) are available to coach the child during naturalistic interactions when children with ADHD, because of their theorized executive functioning deficits, become sidetracked by competing impulses if they do not have reminders and reinforcements for appropriate behavior (Barkley 1997). In this way, parents may increase the probability that the child will generalize skilled behaviors outside of therapy. Again, while parents have been found to influence their adolescents' friendship competence (Vernberg et al. 1993), it will be more difficult for parents of adolescents to do so, given that it is no longer developmentally normative for parents to be involved in playdates for youth this age.

As noted earlier, support already exists for the idea that intensely involving parents in the behavioral treatment of elementary school-age children with ADHD may improve the effectiveness of interventions (Frankel et al. 1997; Pfiffner and McBurnett 1997; Pfiffner et al. 2007; Reitman et al. 2005). However, none of these studies has focused on friendship specifically, or incorporated peer-report or observational measures as an index of change. These existing interventions also do not go far enough in conceptualizing the parent as the *primary* agent of change. Mainly, these studies have used parent involvement to reinforce what is taught to the child in therapy. These interventions capitalize on the parent's proximity to the child in the real world and harness the parent's potential to assist the child's performance through reminders of what the child learned in therapy. However, including the manners in which parents construct playdate opportunities for their children that encourage friendship may increase treatment efficacy. In support of this idea, the previously noted study of a friendship intervention for children with ADHD (Hoza et al. 2003) found that if parents set up playdates with their child's assigned buddy, their child and buddy developed a closer friendship.

Such a friendship intervention could potentially augment existing behavioral management, medication, or social skills interventions for children with ADHD, although the value of this approach remains an empirical question. Because these existing interventions have demonstrated success in reducing children's disruptive, aggressive, and intrusive behaviors and in augmenting focus and compliance with adults, this may facilitate the subsequent building of friendship skills. That is, behavioral management, medication, and/or social skills interventions may be key to minimize peer dislike (so that there is any chance of a relationship with a potential friend), and to allow the child to listen to his or her parent's guidance about appropriate friendship-making behaviors. All three friendship interventions reviewed above reported suggestions of efficacy for children concurrently receiving other established ADHD treatments. Hoza et al. (2003) administered their intervention at the summer treatment program, a behavioral management intervention (Pelham and Hoza 1996). The intervention of Frankel et al. (1997) was administered solely to children receiving stimulant medications. Mikami et al. (in press-b) used a sample where the majority of the children were medicated and reported no treatment by medication status interactions on outcome variables.

Summary

It has been well established that children with ADHD experience substantial peer relationship problems leading to depression, criminality, school failure, and substance abuse. To date, difficulties with peer acceptance and social skills in ADHD populations have been studied to a greater extent than have difficulties with dyadic friendship. Nonetheless, all available evidence suggests that youth with ADHD experience trouble with making friends, keeping friends, the quality of the friendship, and selecting friends who are not involved in

deviant activity. In light of findings suggesting the buffering effect of friendship on good adjustment among typically developing youth, there is reason to believe that if a child with ADHD can establish high-quality, stable friendships with nondeviant peers, this will protect against later psychopathology. The benefit of having even one good friendship may still occur even if the child with ADHD remains unpopular overall in the larger peer group.

The peer rejection among children with ADHD has been refractory to most existing interventions, such as medication, behavior management, and social skills training. Given that peer rejection may be too difficult or too impractical to change, a targeted focus on improving dyadic friendship may be a feasible goal that is also more likely to lead to generalization of skills outside of the therapy context. This paper serves as a call to action to explore the development and validation of interventions targeted specifically to friendship. A successful friendship intervention might focus on the selection of appropriate friends, teach the particular behaviors known to be related to positive friendship formation in a single context of playdates, and have high involvement of parents in the treatment.

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Table 1

Summary of empirical studies about friendship in ADHD

Study	Participants	Results
Bagwell et al. (2001)	<i>n</i> = 111 youth who had ADHD in childhood; <i>n</i> = 100 comparison youth with no history of ADHD. Ages 13–18. 96% male	No youth self-report differences in number of friends; parents reported fewer friends for youth with ADHD. Youth with ADHD and parents reported fewer friends who engaged in conventional activities
Blachman and Hinshaw (2002)	<i>n</i> = 140 with ADHD; <i>n</i> = 88 comparison. Ages 6–12. 100% female	Youth with ADHD had fewer friendships and lower friendship stability across 6 weeks (sociometrically assessed), and poorer friendship quality (self-reported)
Erhardt and Hinshaw (1994)	<i>n</i> = 25 with ADHD; <i>n</i> = 24 comparison. Ages 6–12. 100% male	Youth with ADHD had fewer friendships (sociometrically assessed), after 3 days interacting with unfamiliar peers
Gresham et al. (1998)	<i>n</i> = 25 with ADHD + conduct problems; <i>n</i> = 105 with externalizing/internalizing problems without ADHD; <i>n</i> = 101 comparison. Third graders. 58% male	The ADHD + conduct problem group had the fewest friendships (sociometrically assessed), followed by the externalizing/internalizing group; comparison youth had the most friendships. Group differences persisted across a year
Hoza et al. (2005a)	<i>n</i> = 165 with ADHD; <i>n</i> = 165 comparison; ages 7–9. 79% male	Children with ADHD had fewer friendships (sociometrically assessed). Comorbid anxiety disorders with ADHD associated with fewer friendships at a trend level
Heiman (2005)	<i>n</i> = 39 with ADHD; <i>n</i> = 17 comparison; ages 7–12. 77% male	No youth self-report differences in number of friends; parents and teachers reported fewer friends for youth with ADHD. Youth with ADHD self-reported poorer relationship quality in their friendships
Marshal et al. (2003)	<i>n</i> = 142 who had ADHD in childhood; <i>n</i> = 100 comparison with no history of ADHD. Ages 13–18. 94% male	Youth with a history of ADHD self-reported that their friends were more likely to use substances relative to comparison youth